

Abstract

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Quantum footprints of Liouville integrable systems

Joint with Monique Dauge and Mike Hall

Liouville integrable systems in classical mechanics have a rich geometric structure which gives rise to many interesting invariants: monodromy, rotation number, singularity types, twisting indices, etc. A natural quantum version of Liouville integrability is the data of commuting self-adjoint operators. I will report on various progress on the question “can you ‘hear’ the classical invariants from the joint spectrum of a quantum integrable system? (in the semiclassical limit)”. I will include a recent work with Dauge and Hall on the detection of the so-called “asymptotic lattices”, corresponding to Bohr-Sommerfeld tori.